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REMARKS

This paper is responsive to a non-final Office action dated October 9, 2003. Claims 1-41 were examined. The following issues, raised by the Office or pertinent to the present action, will be discussed below:

- I. Claims 1-4, 12, 14, 15, 17, 18, 19, 24, 26-32, 35-38, and 40-41 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,311,187 issued to Jeyaraman (hereinafter "Jeyaraman");
- II. Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Jeyaraman in view of U.S. Patent No. 5,781,906 issued to Aggarwal et al. (hereinafter "Aggarwal");
- III. Claims 6, 7, 13, 20-23, 25, 33, 34, and 39 were rejected under 35 U.S.C. 103(a) as being unpatentable over Jeyaraman in view of U.S. Patent 6,539,369 issued to Brown (hereinafter "Brown"); and
- IV. Claims 8-11 and 16 were objected to as being dependent upon a rejected base claim, but the Office noted that these claims would be allowable if rewritten in independent form.

**I. REJECTION OF CLAIMS 1-4, 12, 14, 15, 17, 18, 19, 24, 26-32, 35-38, AND 40-41***General Analysis of the Rejection*

The Office has rejected Claims 1-4, 12, 14, 15, 17, 18, 19, 24, 26-32, 35-38, and 40-41 under 35 U.S.C. 103(a) as being unpatentable over Jeyaraman. "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." MPEP 2143.03, quoting *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Claim limitations not found in the prior art cannot be supplied by general conclusions. MPEP 2144.03, citing *In re Zurko*, 59 USPQ2d 1693, 1697 (Fed. Cir.2001). Furthermore, a *prima facie* case of obviousness requires that the suggestion to combine or modify be found either explicitly or implicitly in the references themselves or in the knowledge generally available to one skilled

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in the art. MPEP 2143.01. Note that while the suggestion to combine or modify may be found implicitly in the knowledge generally available to one skilled in the art, the office is not relieved of its obligation to provide evidence in support of its finding. *See In re Lee*, 61 USPQ2d 1430, 1434.

The Applicant submits that the Office has failed to meet its burden of establishing a prima facie case of obviousness under 35 U.S.C. 103(a), because Jeyaraman, alone or in combination with other cited art, does not teach or suggest collapsing nodes in an order independent manner. Additionally, the motivation to modify a reference must be found, either explicitly or implicitly, in the cited references or in the knowledge generally available to one of ordinary skill in the art at the time of the invention. MPEP 2143.01. The Applicant submits that the Office has not provided a motivation to modify Jeyaraman to arrive at the Applicant's claimed invention, but rather has simply noted a general desire to eliminate duplicate nodes.

Cited Art Does Not Teach or Suggest All Claim Limitations

In its rejection, the Office notes that Jeyaraman does not clearly teach collapsing in an order-insensitive manner. The Office does point out that Jeyaraman teaches splitting parent nodes and collapsing nodes (*See* detailed action, p 3). However, the assertion that order-independence in splitting nodes can be inferred because when splitting a node, children of one node become the right-most children of another node (*See* detailed action, p 3) is not well founded. In fact, Jeyaraman deals with propagating updates efficiently in hierarchically structured data (*See* Jeyaraman, title and abstract). Specifically, Jeyaraman deals with changing or updating an old tree to reflect changes made to the tree at possibly some other location (*see* Jeyaraman column 6, lines 34-42). In updating an old tree to reflect changes, if a position of a node in the tree to be updated has a different position than that same node in the updated tree, the old tree is updated to reflect the new position (Jeyaraman column 7, lines 54-57). Thus, far from being order-insensitive, Jeyaraman teaches changing an old tree to reflect changes in node order. In short, the techniques of Jeyaraman are order sensitive. Accordingly, order insensitive collapse is not only missing from Jeyaraman, but is inconsistent with Jeyaraman's technique.

The Office does not cite any prior art to supply the missing element, but relies instead on an unsupported assertion that it would have been obvious to a person of ordinary skill in the art

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to apply Jeyaraman's teaching of splitting the parent nodes to collapse a first and second node in order to eliminate duplicate nodes in a tree for saving memory space (*See* detailed action, p 3). Since unsupported assertions cannot form the basis of a rejection under 35 U.S.C. 103(a), the Applicant submits that the Office has failed to meet its burden of producing a *prima facie* case of obviousness. The Applicant, therefore, respectfully requests the Office either to provide a prior art reference teaching or suggesting order-insensitive collapsing, or to withdraw the rejection under 35 U.S.C. 103(a).

No Motivation To Modify Jeyaraman To Arrive At Claimed Invention

Even if Jeyaraman did suggest modifying its teaching of splitting parent nodes, as the Office suggests, the Office has not provided any evidence that one skilled in the art at the time of the invention would be motivated to modify Jeyaraman to arrive at the Applicant's invention. The Applicant, therefore, respectfully requests the Office to point out an objective teaching in the prior art or the knowledge generally available to one of ordinary skill in the art that would lead that individual to combine the relevant teachings of the references, or to withdraw its objections under 35 U.S.C. 103(a).

Furthermore, modifying Jeyaraman to include order independence would render Jeyaraman unsatisfactory for at least a portion of its intended purpose. As noted above, Jeyaraman deals with changing/updating an old tree to reflect changes made to the tree at possibly some other location (see Jeyaraman column 6, lines 34-42). In updating an old tree to reflect changes, if a position of a node in the tree to be updated has a different position than that same node in the updated tree, the old tree is updated to reflect the new position (Jeyaraman column 7, lines 54-57). If, as the Office suggests, one were to modify Jeyaraman to collapse nodes in an order independent manner, a faithful update of the old tree to match the contents of the new tree would be hindered. The Applicant respectfully requests, therefore, that the Office withdraw its objections under 35 U.S.C. 103(a).

Claims 1, 18, 35, 41, and Dependents Thereof

Inasmuch as independent claims 1, 18, 35, and 41 each include elements reciting order-independent collapsing, a rejection under 35 U.S.C. 103(a) over Jeyaraman is not supported, and

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the claims are allowable. The Applicant, therefore, respectfully requests the Office to withdraw its rejection of claims 1, 18, 35, and 41. Inasmuch as any claims depending from these allowable independent claims are themselves allowable, the Applicant further respectfully requests the Office to withdraw its rejection of such dependent claims.

*Claim 29 and Dependents Thereof*

Regarding the rejection of Claim 29, the Office points to column 7, lines 50-66 and column 8, lines 1-10 to support an assertion that Jeyaraman teaches representing a node as a concatenation of node specific information and orthogonal values of collapsed sub-hierarchies. (See official action pp. 9-10). The Office notes that Jeyaraman does not teach recursively collapsing sub hierarchies using encodings that include orthogonal values. The Office asserts, however, that it would have been obvious to modify the collapse operation disclosed in Jeyaraman to achieve the Applicant's claimed invention.

The Applicant is unable to find anything in Jeyaraman relating to representing nodes as a concatenation of node-specific information, orthogonal values, or concatenating node representations with orthogonal values. The Applicant respectfully requests, therefore, that the Office either point out the specific areas of Jeyaraman that teach or suggest concatenating node specific information with orthogonal values, or withdraw its rejection of claim 29 under 35 U.S.C. 103(a).

Furthermore, the Office has failed to point to any evidence of record that supports its assertion that Jeyaraman teaches or suggests modifying its collapse operation to achieve the Applicant's claimed invention. The Applicant respectfully requests, therefore, that the Office either make of record evidence of a suggestion to modify Jeyaraman, or withdraw its rejection of claim 29 under 35 U.S.C. 103(a). Inasmuch as claim 29 is in condition for allowance, claims 30, 31, and 32, which depend from claim 29, are also in condition for allowance, which allowance is respectfully requested.

**II. REJECTION OF CLAIM 5**

The Office rejected Claim 5 under 35 U.S.C. 103(a) as being unpatentable over Jeyaraman in view of Aggarwal. Inasmuch as claim 5 is a dependent claim depending from

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allowable independent claim 1, claim 5 is itself allowable, which allowance is respectfully requested.

### **III. REJECTION OF CLAIMS 6, 7, 13, 20-23, 25, 33, 34, AND 39**

#### **Dependent Claims 6, 7, 13, 20-23, 25, and 35**

Claims 6, 7, 13, 20-23, 25, 33, 34, and 39 were rejected under 35 U.S.C. 103(a) as being unpatentable over Jeyaraman in view of Brown. Inasmuch as claims 6, 7, 13, 20-23, 25, and 35 depend upon allowable independent claims as previously discussed, the Applicant submits that such claims are themselves allowable, and respectfully requests such allowance.

#### **Claims 33 and 34**

Regarding independent claim 33, the Office asserts that Jeyaraman teaches that collapsing includes an order-insensitive aggregation of orthogonal encodings. (See official action pp. 21-22). The Office further asserts that given the asserted teachings of Jeyaraman, it would have been obvious to combine Jeyaraman and Brown to arrive at the Applicant's claimed invention.

#### **Teachings of Jeyaraman**

The Applicant is unable to find anything in Jeyaraman relating to order-insensitive aggregation or orthogonal encodings. The Applicant respectfully requests, therefore, that the Office either point out the specific areas of Jeyaraman that teach or suggest that collapsing includes an order-insensitive aggregation of orthogonal encodings, or withdraw its rejection of claim 29 under 35 U.S.C. 103(a).

#### **Combination of Jeyaraman and Brown**

Inasmuch as Jeyaraman does not teach or suggest collapsing that includes an order-insensitive aggregation of orthogonal encodings, the combination of Jeyaraman and Brown does not teach or suggest all elements recited in claim 33. Furthermore, Jeyaraman teaches away from order-insensitive collapsing, and is thus not properly combinable to make a prima facie case of obviousness. The Applicant submits, therefore, that claim 33 is allowable and

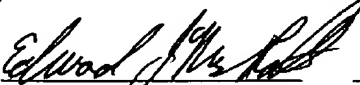
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respectfully requests such allowance. Inasmuch as claim 34 depends from allowable independent claim 33, the Applicant respectfully requests that the rejection of claim 34 also be withdrawn, and that claim 34 be allowed to issue.

#### IV. OBJECTIONS TO CLAIMS 8-11 AND 16

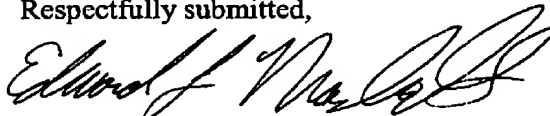
The Office noted that claims 8-11 and 16 were be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims. Inasmuch as claims 8-11 and 16 depend either directly or indirectly from allowable independent claim 1, the Applicant submits that claims 8-11 and 16 are in condition for allowance as filed, and respectfully requests such allowance.

In summary, claims 1-41 are in the case. All claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully solicited. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

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Respectfully submitted,



Edward J. Marshall, Reg. No. 45,395  
Attorney for Applicant(s)  
(512) 338-6321  
(512) 338-6301 (fax)